

PATENT CLAIMS

1. A hydraulic twin clutch for a transmission having two transmission input shafts, comprising:

- 5 first and second transmission input shafts;
a driven clutch housing;
a first clutch for releasably connecting the clutch housing to the first transmission input shaft, having first friction discs;
a first annular piston-cylinder unit, located radially outward of the first
10 transmission shaft and radially inward from the first friction discs for hydraulically-actuating the first clutch;
second clutch for releasably connecting the clutch housing to the second transmission input shaft, having second friction discs;
a second annular piston-cylinder unit located adjacent the first piston-
15 cylinder unit, located adjacent the first friction discs, located radially outward of the second transmission shaft and radially inward from the second friction discs, for hydraulically-actuating the second clutch;
a clutch web fixed to the clutch housing, located between the first and second clutches and between the first and second piston-cylinder units.

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2. The hydraulic twin clutch as claimed in claim 1, further comprising:
a clutch cover driveably connected to the clutch housing; and
a clutch hub to which the clutch web and clutch housing are driveably connected.

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3. The hydraulic twin clutch of claim 1, further comprising:

- a first clutch bell driveably connecting the first transmission input shaft and first clutch, having a radially inner surface driveably engaged with [output side] friction discs of the first clutch; and
30 a first clutch bell driveably connecting the second transmission input shaft and second clutch, having a radially inner surface driveably engaged with [output side] friction discs of the second clutch.

4. The hydraulic twin clutch as claimed in claim 1, further comprising:
a first pressure plate for the first clutch and a second pressure plate for
the second clutch, each pressure plate formed integrally with the clutch web.

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5. The hydraulic twin clutch as claimed in claim 1, wherein
the first clutch further comprises a first set of input friction discs, a first
disc carrier supporting the first set of input friction discs and formed integrally on
the clutch web; and

10 the second clutch further comprises a second set of input friction discs, a
second disc carrier supporting the second set of input friction discs and formed
integrally on the clutch web.

15 6. The hydraulic twin clutch as claimed in claim 2, wherein the first
clutch further comprises a third pressure plate located at the opposite axial side
of the first discs from the location of the first pressure plate, the second clutch
further comprises a fourth pressure plate located at the opposite axial side of the
second discs from the location of the second pressure plate; further comprising:

20 a first annular cylinder forming a working chamber supplied with
pressurized oil, driveably connected to the clutch hub;
a second annular cylinder forming a working chamber supplied with
pressurized oil, driveably connected to the clutch hub;

25 a first annular piston movably guided and sealed in the first annular
cylinder, arranged between the clutch web and first cylinder, and adapted to
apply force on the third pressure plate; and

a second annular piston movably guided and sealed in the second
annular cylinder, arranged between the clutch web and second cylinder, and
adapted to apply force on the third pressure plate and fourth.

30 7. The hydraulic twin clutch according to claim 6, further comprising:
a first contact-pressure ring radially surrounding the first cylinder;

5 a compensating cover carried on the contact-pressure ring, located on the opposite side of the first annular cylinder from the location of the first piston, the compensating cover, first contact-pressure ring and first cylinder forming a chamber for compensating the pressure in the first piston.

15 9. The hydraulic twin clutch according to claim 8, wherein the chamber is filled with pressurized oil from the first cylinder through a relatively small filling hole formed in the first cylinder.

20 10. The hydraulic twin clutch according to claim 8, wherein the
chamber is filled with pressurized oil via a filling hole, independently of pressure
in the first cylinder.